

AMENDMENTS TO THE SPECIFICATIONPage 1, Line 22 to Page 2, Line 8

However, the liquid magnetic processing unit of this type of structure can activate the liquid by ~~working a~~ using the magnetic flux of the permanent magnet, in which an N pole and an S pole mutually attract, to create a magnetic field throughout all of the ~~entire~~ liquid flowing in the water pipe, as long as it is a thin water pipe piped as found in the ~~a~~ small size factory and ~~the general~~ a typical residential house. But in the case of a thick water pipe having the diameter of about 500 mm to 1000 mm piped as used in a middle size or a large size factory and the like, the magnetic force ~~does not work~~ cannot be positioned to ~~an~~ the approximate center of the pipe so as to mutually attract the N pole and the S pole, and thus the liquid flowing in the pipe could not be activated. Therefore, development of ~~the~~ a liquid magnetic processing unit that can activate the liquid flowing in the pipe of a thick diameter has been desired.

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The present invention has been created to solve the problem in such prior art. The object of the present invention is to provide ~~the~~ a liquid magnetic processing unit that can activate the ~~liquid water~~ flowing in ~~the~~ a thick pipe so as to treat ~~the~~ water.

Specifically, the liquid magnetic processing unit of the present invention is a unit ~~wound placed~~ around the pipe, in which the liquid flows, so as to activate the liquid ~~by the~~ with a magnetic force. The unit which comprises a water treatment section having a band ~~were wound~~ around the pipe and a plurality of magnet housings equipped attached to the band ~~in an inserting~~ manner, ~~by having the band inserted therethrough, each of which house houses~~ a plurality of permanent magnets inside, and the water treatment section is covered with a case ~~that consists~~ of non-magnetic material.

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In addition to the foregoing, in the liquid magnetic processing unit of the present invention, permanent magnets having different polarities are reciprocally arranged adjacent to each other in the magnet housing, and the permanent magnets of the different polarities are reciprocally arranged in the magnet housings ~~equipped attached to the band in the inserting manner by having the band inserted therethrough~~ and arranged adjacent to each other.

In the liquid magnetic processing unit of the present invention, in addition to the foregoing, a waterproof member ~~is filled~~ fills the spaces between the magnet housings of the water treatment section and the case.

Furthermore, the liquid magnetic processing unit of the present invention is a unit ~~wound mounted~~ around the pipe, in which the liquid flows, so as to activate the liquid by the magnetic force, ~~comprises~~. The unit has a plurality of the permanent magnets, and each permanent magnet is arranged so as to ~~balance position the~~ magnetism of the N pole and the S pole in the approximate center of the pipe.

Still further, the liquid magnetic processing unit of the present invention is a unit ~~wound mounted~~ around the pipe, in which the liquid flows, so as to activate the liquid by the magnetic force, which unit comprises ~~the a pair of~~ water treatment sections formed by a plurality of magnet housings, each having a plurality of the permanent magnets of different polarities from each other housed inside. Even even numbers of the magnet housings of the water treatment sections are arranged around the pipe in an opposing manner to each other, thus sandwiching the pipe. The the magnet housings of the water treatment sections are arranged to make the polarities of permanent magnets opposing to each other and sandwiching the pipe, to be the same so as to balance the magnetism of the N pole and the S pole in the approximate center of the pipe and to make different the polarity of the permanent ~~magnet~~ magnets provided in one of adjacent ~~water treatment sections~~ magnet housing and the polarity of the permanent ~~magnet~~ magnets in another ~~water treatment~~ sections magnet housing adjacent to the foregoing permanent ~~magnet~~ magnets in the one housing to be different.

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Fig. 2 is an assembly perspective view of ~~the a magnet housing of a water treatment sections section~~ constituting the liquid magnetic processing unit of the present invention.

Fig. 3 is a front view of a plurality of the magnet housings of the water treatment sections section inserted through ~~the a band of~~ constituting the liquid magnetic processing unit of the present invention.

Fig. 4 is a rear view of the plurality of magnet housings of the water treatment sections section inserted through the band of Fig. 3.

Fig. 5 is a side view of the plurality of magnet housings of the water treatment sections section inserted through the band of Fig. 3.

Fig. 6 is a view showing the arrangement of the permanent magnets in the magnet ~~housing equipped~~ housings attached to the band constituting ~~the a water treatment section in the inserting manner by having the band inserted therethrough~~.

Fig. 7 is a view showing the state where the water treatment ~~sections constituting the liquid magnetic processing unit of the present invention are~~ section is attached around the pipe.

Fig. 8 is a schematic view of the magnetic flux of the permanent magnets when the water treatment ~~sections constituting the liquid magnetic processing unit of the present invention are~~ section is attached around the pipe.

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Next, the embodiment of the present invention will be described in detail based on the drawings. Fig. 1 is a front view of a liquid magnetic processing unit 10 of the present invention. Fig. 2 is an assembly perspective view of a magnet housing 12 of the water treatment sections 11 constituting section 11 which is part of the liquid magnetic processing unit 10 of the present invention. Fig. 3 is a front view of a plurality of the water treatment sections 11 inserted magnet housings 12 through which a band 20 constituting the liquid magnetic processing unit 10 of the

~~present invention is inserted. Fig. 4 is a rear view of a plurality of the water treatment sections 11 inserted magnet housings 12 through which the band 20 of Fig. 3 is inserted. Fig. 5 is a side view of the water treatment section 11 inserted magnet housings 12 through which the band 20 of Fig. 3 is inserted. Fig. 6 is a view showing the arrangement of permanent magnets 19 in a magnet housing 12 equipped attached to the band 20 constituting the water treatment section 11 in the inserting manner.~~

The liquid magnetic processing unit 10 is shown in Figs. 1 and 10 attached to a thick water pipe 33 having ~~the a~~ diameter of about 500 mm to 1000 mm disposed as a pipe in a middle size or a large size factory and the like. Preferably, the liquid magnetic processing unit 10 is installed to a water feeding source of a water pipe 33 disposed in ~~the a~~ middle size or the large size factory and the like, and it activates the liquid flowing in the water pipe 33 to improve water quality. The liquid magnetic processing unit 10 is constituted of the water treatment ~~sections~~ section 11, the band 20 and a case 25.

~~The A magnet housing 12 of the water treatment section 11 is constituted of an external boxes box 13, an internal boxes box 16 and permanent magnets 19 in the internal box 16, in which the boxes 13 and 16 consist are of a stainless steel plate, which is being non-magnetic and hard to stain, and the corrode. The external box 13 is formed in an approximate rectangular shape of about 60 mm (length), about 15 mm (width) and about 22 mm (height) by making its four corners bent in an approximate right angle. The external box 13 forms an opening 13A by making one side thereof open to be constituted such that the internal box 16 (described later) can be inserted from the opening 13A.~~

Page 8, Line 16 to Page 9, Line 12

The band 20 is formed in a band shape having ~~the a~~ width of about 20 mm and ~~the a~~ thickness of about 0.3 mm. ~~It is constituted of a stainless steel plate that is hard to stain corrode easily, synthetic resin or an elastic member such as cloth (more preferably of the stainless steel plate), and is constituted of an enough length such that the band 20 can wind be wound around the~~

water pipe 33. A plurality of the magnet housings 12 are equipped attached to the band 20 in the inserting manner by having the band inserted therethrough, such as shown in Fig. 6.

The band 20 is inserted through the band holes 15B (Fig. 2, the band holes 15B formed on the external box 13) of the magnet housing 12. At this point, the band 20 is equipped attached to the magnet housing 12 such that the internal box 16 positions is positioned on one side of the band 20 and the external box 13 position is positioned on the other side of the band 20. Then, joining member 22 and 23 are severally attached between the two magnet housings on the both ends equipped to the band 20 in an inserting manner and the magnet housings 12 that are positioned next to the ones on the both ends Joining members 22 are attached to the two magnet housings at each end of the band 20 (Figs. 3, 4 and 5). A member 23 attaches the member 22 to each other, so as to hold the band about a water pipe 33 (Fig. 7).

Note that reference numerals 21 and 21 are stoppers fixed by caulking at the both two end portions of the band 20, and the stoppers 21 are formed a little larger than the band hole 15B to prevent the band 20 from slipped slipping off the band holes 15B of the side plate 15. In addition, reference numerals 22A and 22A are bolt holes.

Page 10, Lines 3-21

And then, even numbers of the magnet housings 12 are inserted through the band 20. In this case, the permanent magnets 19 housed in the both magnet housings 12 and 12 inserted through the band 20 at one end and at another end thereof are made to have different polarities in the state where the water treatment sections 11 they are attached to the water pipe 33 (Fig. 7). Specifically, the even numbers of the water treatment sections 11 magnet housings 12 are arranged around the water pipe 33 in order to oppose to each other, sandwiching the water pipe 33 so as to balance the magnetism of the N pole and the S pole in the approximate center of the water pipe 33, and the water treatment sections 11 magnet housings 12 are arranged such that the permanent magnets 19 opposing to each other and sandwiching the water pipe 33 are made to have the same polarity and thus the polarity of the permanent magnet 19 provided in one of adjacent water treatment sections 11 magnet housings 12 and the polarity of the permanent magnet 19 provided in

another ~~water treatment sections 11~~ magnet housings 12 adjacent to the concerned permanent magnet 19 are made to be different.

Page 13, Line 5 to Page 14, Line 4

Then, the magnet housings 12 of the ~~water treatment sections 12~~ section are attached to the water pipe 33 with the band 20. In this case, even numbers of the ~~water treatment sections 11~~ magnet housings 12 are attached to the water pipe 33 with the band 20. In this case, even numbers of the ~~water treatment sections 11~~ magnet housings 12 are equipped attached to the band 20, and an appropriate number of the ~~water treatment sections 11~~ magnet housings 12 that can be equipped placed around the water pipe 33 in approximately close contact ~~shall be equipped~~ are attached to the band 20 in an inserting manner by having the band inserted therethrough. Then, the ~~water treatment sections 11~~ magnet housings 12 are wound and attached to the water pipe 33 as the pipe arranged in the middle size or the large size factory. In this case, bolts 23 are inserted through the bolt holes 22A and 22A of the joining members 22 and 22 provided at the both ends of the band 20 after the internal boxes 16 of the magnet housings 12 of the ~~water treatment sections 11~~ section are adhered and fixed around the water pipe 33, and nuts 24 are tightened to fix the water treatment sections 11 to the water pipe 33.

And then, as shown in Fig. 1, the ~~water treatment sections~~ section 11 fixed to water pipe 33 with the band 20 ~~are~~ is covered with ~~the~~ a case 25. The case 25 covers the entire ~~the~~ water treatment sections section 11 ~~are~~ fixed to the water pipe 33 with the band 20, and is constituted of a pair of case bodies 26 and 26 that ~~consist~~ are made of the non-magnetic material that is hard to stain corode, such as stainless steel. The case body 26 is constituted of a large diameter portion 27 and a small diameter portion 28, and the large diameter portion 27 is formed in a size that can cover only a half of the water treatment sections 11 fixed to the water pipe 33 with the band 20.

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Moreover, a collar 29 with a predetermined width is formed around the case 26, and the screw holes 29A are severally formed at the four corners of the collar 29. The collar 29 is formed so as to extend from the case body 26 by a predetermined distance, and the collars 29 are formed on the both case bodies 26 and 26 so as to opposingly abut the magnet housings 12 forming the water treatment sections section 11 is with the housings sandwiched from the both sides. The both two case bodies 26 and 26 are fixed together and the case 25 is fixed to the water pipe 33 by inserting screws 30 into the screw holes 29A and by tightening nuts 30A from the other side (Fig. 10). Note that reference numeral 31 denotes a fixed screw, the fixed screws 31 are provided around the small diameter portion 28, and the case body 26 is fixed to the water pipe 33 by tightening.

A waterproof member 32 is filled between the both case bodies 26 and 26 and the water pipe 33 in the state where the case 25 is attached to that water pipe 33, and the magnet housings 12 of the water treatment sections section 11 are covered with the case, band. Band 20, the joining member 22 and the like are fixed by the waterproof member 32. The waterproof member 32 is constituted of a material, such as a silicon foaming agent, which is waterproof having waterproofness, and prevents water from penetrating the space between the both case bodies 26 and 26 and the waterproof member 32. Specifically, the permanent magnet 19 constituted of metal such as neodymium, easily stains, corrodes and the magnetic force reduces if the permanent magnet 19, stains corrodes. Therefore, the waterproof member 32 is filled located between the both case bodies 26 and 26 and the water pipe 33 to prevent the permanent magnets 19 from staining corroding.

As described, the magnet housings 12 of the water treatment sections section 11, each housing a number of the permanent magnets 19, are covered with the case 25 that consists is made of the non-magnetic material, and the permanent magnets 19 having different polarities are reciprocally arranged adjacent to each other in the magnet housing 12. Since the permanent magnets 19 in the magnet housings 12, which are equipped attached to the band in an inserting manner by having the band inserted therethrough and are located adjacent to each other, are reciprocally arranged in the different polarities, a strong magnetic field is formed in which the magnetism of the N and S poles is balanced in the approximate center in the water pipe 33, can be

~~formed.~~ Accordingly, a strong zero magnetic field can be formed inside the water pipe 33, the zero magnetic field can be formed inside ~~the a~~ thicker water pipe than the water pipe disposed in ~~the general a typical residential~~ house. Therefore, even the liquid in the thick water pipe, which has not been conventionally activated, can be certainly activated.

The even numbers of the magnet housings 12 of the water treatment sections section 11 are arranged around the water pipe 33 in order to oppose to each other sandwiching and sandwich the water pipe 33, ~~the~~. The water treatment sections 11 housings 12 are arranged such that the permanent magnets 19 opposing to each other when sandwiching the water pipe 33 and are made to have the same polarity so as to balance the magnetism of the N pole and the S pole in the approximate center of the water pipe 33, ~~and the~~ The polarity of the permanent magnet 19 provided in one of adjacent ~~water treatment sections 11~~ housings 12 and the polarity of the permanent magnet 19 ~~are~~ are provided in another of the water treatment section 11 the housings 12 adjacent to the foregoing permanent magnet 19 ~~is~~ are made to be different. With this arrangement, the strong magnetic field ~~in which can be formed in the water pipe 33 such that~~ the magnetism of the N and S poles of a plurality of the permanent magnets 19 is balanced, ~~can be formed in the water pipe 33~~ even if the magnetic flux does not work conventionally such that the N and S poles of the permanent magnets 19 attract each other ~~to~~ at the approximate center of the pipe having a thick diameter. Accordingly, the liquid flowing in the pipe of the thick diameter can be certainly activated.

Moreover, since the waterproof member 32 is filed between the magnet housings 12 of water treatment sections section 11 and the case 25, ~~the~~ disadvantage ~~such in~~ that the permanent magnets 19, ~~stains~~ corrodes due to the liquid or humidity, can be ~~certainly~~ prevented. Thus, the permanent magnets 19 are prevented from ~~staining~~ corroding, and the liquid magnetic processing unit 10 can be used semipermanently.

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Further, in the embodiment, ~~the band was inserted through~~ even numbers of the magnet housings ~~were equipped to the band 20 in an inserting manner~~, and one end and the other

end of the band 20 were fixed in the state where the magnet housings 12 of the water treatment sections section 11 were attached to the water pipe. The present invention is not limited to this, but is effective when the water treatment sections 11 are equipped housings 12 are attached to the band 20 in at a predetermined distance and water treatment sections 11 housings 12 are equipped mounted to the water pipe 33 in approximately close contact in the state that the band 20 is spirally wound around the water pipe, the permanent magnets 19 housed in one of adjacent magnet housings 12 equipped attached to the band 20 in an inserting manner by having it inserted therethrough and the permanent magnets 19 housed in another magnet housing 12 are made to have different polarities, and the zero magnetic field in which the magnetism of the N and S poles is balanced inside the water pipe 33 is formed.

Page 19, Line 16 to Page 20, Line 15

Further, a plurality of the water treatment sections 11 were can be attached to the water pipe 33 each with the a band 20 and covered with the case 25. The present invention is not limited to this, but it is effective even if a plurality of the water treatment sections 11 are attached to the water pipe 33 by other methods without using the band 20 and the case 25 when the permanent magnets 19 are arranged to make the the magnetic field zero inside of the water pipe 33 to be the zero magnetic field.

According to what has been described above in detail, the present invention is a unit wound around the pipe in which the liquid flows and that activates the liquid by the magnetic force; which. The unit comprises: the water processing sections section having the band and the magnet housings equipped attached to the band in an inserting manner by having it inserted through the housings and in which housings a plurality of the permanent magnets are housed located. Since the case that consists is made of the a non-magnetic material uand covers the water treatment sections section, the a strong magnetic field in which the magnetism is balanced can be formed in the pipe, for example, by arranging the permanent magnets having different polarities next to each other adjacently in the magnet housing and by arranging the permanent magnets in the magnet housings equipped attached to the band in an inserting manner and adjacent to each other in the different

polarities. Accordingly, for example, the strong magnetic field in which the magnetism is balanced in ~~the a~~ pipe thicker than the pipe disposed in the ~~general typical residential~~ house is formed, and the liquid in the pipe can ~~be~~ certainly be activated.

Page 20, Line 19 to Page 21, Line 2

Furthermore, since the waterproof member ~~was is~~ between the magnet housings ~~12 of the water treatment sections section~~ and the case, the permanent magnets can be ~~certainly~~ prevented from being wet by the liquid. Accordingly, the permanent magnets can be prevented from ~~staining becoming corroded by because~~ the waterproof member ~~filled~~ fills in the space, even in the case where the permanent magnets, such as neodymium ~~are~~ easily chipped off and easily ~~stained~~ become corroded. Thus, since the permanent magnets are prevented from ~~staining corroding~~ ~~certainly~~, the liquid magnetic processing unit can be used semipermanently and the convenience of the liquid magnetic processing unit can be significantly improved.

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Still further, the present invention is a unit wound around the pipe in which the liquid flows and that activates the liquid by the magnetic force, and it comprises the magnet housings of the water treatment sections section in each of which a plurality of ~~the~~ permanent magnets having ~~the~~ different polarities from each other are adjacently housed. And even numbers of the magnet housings of the water treatment sections section are arranged around the pipe opposing to each other and sandwiching the pipes in between, the. The housings of the water treatment sections section are arranged such that the permanent magnets opposing to each other and sandwiching the water pipe are made to have the same polarity in order to make the magnetism of the N and S poles is balanced in the approximate center in of the pipe, and thus the polarity of the permanent magnet 19 provided in one of adjacent housings 12 of the water treatment sections section 11 and the polarity of the permanent magnet 19 provided in another of the housings 12 of the water treatment section 11 adjacent to the concerned permanent magnets 19 are made to be different. Thus, for example, the

strong magnetic field in which the magnetism of the N and S poles of a plurality of the permanent magnets is balanced can be formed in the water pipe even if the magnetic flux does not work conventionally such that the N and S poles of the permanent magnets attract each other ~~to~~ at the approximate center of ~~the~~ a pipe having a thick diameter. Accordingly, even the liquid flowing in ~~the~~ pipe of the thick diameter can certainly be certainly activated in the strong magnetic field in which the magnetism of the N and S poles of a plurality of the permanent magnets is balanced.

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The present invention is directed to provide a liquid magnetic processing unit that can activate a liquid flowing in a thick pipe and can perform water treatment. The liquid magnetic processing unit ~~would~~ is mounted around the pipe in which the liquid flows and ~~that~~ activates the liquid by magnetic force, ~~which~~ comprises a The unit has one or more water treatment sections each having a band ~~were~~ to be placed around the pipe and a plurality of magnet housings equipped which have ~~to~~ the band ~~in an inserting manner~~ inserted through them and that house a plurality of permanent magnets ~~inside in which the~~ . The one or more water processing sections are covered with a case that ~~consists~~ of a non-magnetic material.